RDECOM magazine

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Contents

NCO and Soldier of the Year competition names RDECOM's top troops

By Trinace Johnson
Research, Development and Engineering Command Public Communications Office

At the end of nearly a week of competing for the U.S. Army Research, Development and Engineering Command Noncommissioned Officer and Soldier of the Year Competition, two Soldiers were selected as RDECOM's cream of the crop.

Staff Sgt. Veronica Moore and Spc. Joseph Krafft took home the top titles the week of April 17.

Moore is a human resource specialist with the Army Research Laboratory, Adelphi Md., and Krafft is a base player with the 389th Army Band, RDECOM, Aberdeen Proving Ground, Md.

Spc. Joseph Krafft, RDECOM Soldier of the Year (Photo courtesy of RDECOM Data Imaging)


Staff Sgt. Veronica Moore, RDECOM NCO of the Year (Photo courtesy of RDECOM Data Imaging)

"It was very encouraging and motivating to see our Soldiers compete," said RDECOM Command Sergeant Major Eloy Alcivar.

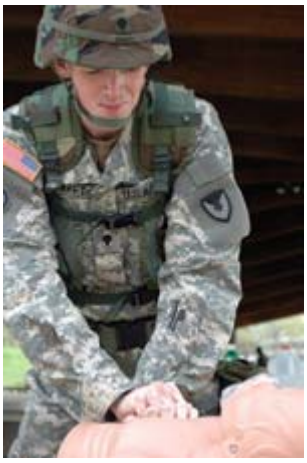
"They all did well and they are ready to compete and win at higher levels," Alcivar said.

Over the course of four days, the Soldiers were tested on their knowledge of day and night navigation, warrior tasks, the live firing of weapons, and 100 multiple choice questions extracted from skill level one and two common training tasks. In addition, they had to take a physical training test and write an essay in one hour on this year's topic: expectations of a pentathlete, multi-task Soldier and NCO.

"I accomplished a goal and it was a good stepping stone for me and females in my unit," Moore said.

"It was a very comprehensive competition. I feel very satisfied to have been able to complete all the tasks," Krafft said.

After the initial CPR tasks are over, all the competing Soldiers get a quick overview. (Photo by Trinace Johnson)



RDECOM Soldier of the Year, Spc. Joseph Krafft, hones in on the correct way to do CPR. (Photo by Trinace Johnson)

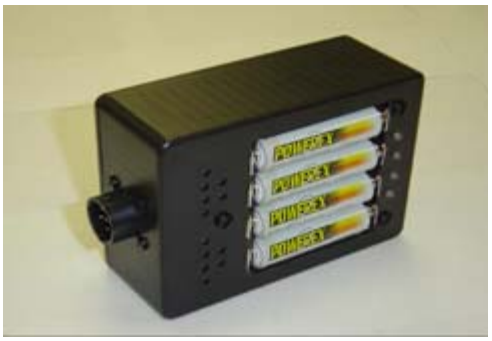
Sgt. Pacheo Nixon explains the proper way to clean a M249. (Photo by Trinace Johnson)

Pfc. Dexter Woods of the Soldier Systems Center, Natick, Mass., shows off his life saving techniques during the competition. (Photo by Trinace Johnson)

Spc. Phara Pierre-Toussaint, ARL, disassembles an M16 Rifle as part of her task. (Photo by Trinace Johnson)

CERDEC Demonstrates Life Saving Technologies to the Chief of Staff of the Army

Desiree DiAngelo
Communications-Electronics Research, Development and Engineering Center



8-Pack (photo courtesy of CERDEC)

Each week, the Communications-Electronics Research, Development and Engineering Center (CERDEC) sends headquarters their Top 5 List, depicting the leading technologies and systems that the center is currently researching and developing.

It is a normal weekly ritual, however the early March list seemed to peek the interest of Gen. Benjamin Griffin, commanding general, Army Materiel Command, whom after viewing the Top 5, was so impressed that he requested a more in depth briefing.

The Chief of Staff of the Army, Gen. Peter J. Schoomaker then hosted a meeting giving several CERDEC representatives an opportunity to showcase their emerging life saving technologies. Also in attendance was the Sgt. Maj. of the Army Kenneth O. Preston, Vice Chief of Staff of the Army, Gen. Richard A. Cody, and Maj. Gen. Roger Nadeau, commander, Research, Development and Engineering Command (RDECOM).

Earlier this year, four RDECOM personnel traveled to the Pentagon to brief the CSA on various technologies from CERDEC's Command and Control Directorate (C2D) and its Night Vision and Electronic Sensors Directorate (NVESD) Fort Belvoir, Va.

"RDECOM has delivered a variety of key capabilities from the lab to the field in support of the global war on terror. We are very appreciative of the opportunity to meet with the Chief of Staff to show a small portion of our contributions," remarked Gary Martin, CERDEC Technical Director.

Representatives from CERDEC's C2D and NVESD were present to showcase their life saving technologies. "The meeting had a conversational tone about it, where everyone was able to discuss the technologies, ask questions and raise concerns. It proved to be very positive for all involved," said, Thomas Soyka, NVESD Chief for Quick Response.

Representing CERDEC's C2D division were Edward Plichta, Chief of the Army Power Division and Steve Slane, Chief of the Battery Branch who briefed on C2D's 8-Pack Scavenger and the Parascope. "The feed back and questions from the CSA about our technologies was very positive. We [C2D] are involved with the whole process, from research, to development, to fielding and he was appreciative to see that development," Plichta said.

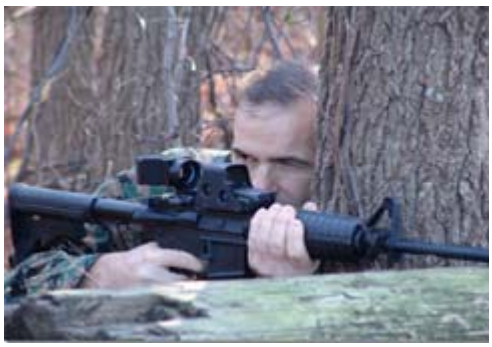
Night Vision (photo coutesy of CERDEC)

The solution is a portable fast battery charger for AA-size cells which recharges up to eight cells in 100 minutes. It “scavenges” unused energy from military power sources that otherwise would have been discarded. The Scavenger is small enough for dismounts to carry, weighs only a few ounces, and saves a platoon 25 pounds over five days.

The other technology presented was the Parascope; an urban combat sight, a simple device which aids soldiers in observing and firing around corners and obstacles, minimizing the shooters exposure and ensuring greater survivability.

Standard cheek to cheek stock aiming methods expose soldiers to threats at the intersections of obstacles and corners. Past solutions, such as cameras with cables and displays proved to be cumbersome and consumed heavy battery power.

The Parascope is a rifle scope which provides a view from a 90 degree angle to see around difficult corners and mounts directly onto a Picattiny Rail-quick release. It provides a wide field of view with no alignment required, while rotating vertically enabling the shooter to look over or under obstacles with zero batteries, zero cables, one moving part; one simple device.



Parascope (photo courtesy of CERDEC)

“These technologies represent RDECOM’s efforts to help meet the technical needs of the current force,” remarked Plichta. “Even more notable, is the fact that these technologies are currently under field and test evaluation, and have been fielded to several units around the world,” he added.

In total, 10 Parascope prototypes have been sent out; with RDECOM sending two units to the Special Operations Command in Afghanistan. Over 200 hundred prototypes of the 8-Pack Scavenger have also been sent out. Four chargers were sent to Task Force 4-11 FA (Stryker Brigade) in Iraq, as well as the Marine Corps System Command in Quantico, Va.

“It was a great honor for us to be present and be recognized. Gen. Schoomaker was genuinely appreciative of all of our efforts,” Plichta remarked.

Dr. A. Fenner Milton, NVESD director and Thomas Soyka, chief, Quick Response Branch attended for NVESD, and briefed on the Wide Field of View Night Vision Goggles (WFOV NVG). A system which allows for increased visual information and situational awareness mobility, especially in urban operations. The WFOV NVG was developed for the Special Operations Command (SOCOM) Special Forces.

“I was pleased to be able to showcase the rapid progress NVESD has made in the past few years with night vision equipment,” Milton said.

It is a system which more than doubles the viewing area, a dramatic increase to a Soldiers’ on-foot and vehicular mobility and situational awareness. It significantly enhances their ability to maneuver on the battlefield and reduces head scanning fatigue.

There are currently nine prototypes being evaluated in the theaters of Afghanistan and Iraq with SOCOM Special Forces teams.

“I took his [Gen. Schoomaker] concerns to heart. There was encouragement to maximize sensor technology on other systems. NVESD has programs heading in that direction and we are happy to build upon those recommendations,” Soyka said.

Although this was the first time the Top 5 List made its way front and center at the Pentagon, it will hopefully not be the last. “The whole experience was very positive. There is much value in having more discussions. It was extremely beneficial to have that top level perspective and direction on our work,” Soyka concluded.

Keeping our Soldiers moving with alternative energy

By Cyndi Lynch and Alicia Price
Tank Automotive Research, Development and Engineering Center

The Army's Tank Automotive Research, Development and Engineering Center's (TARDEC) National Automotive Center brought together industry, academia, and military organizations to exchange the latest advancements in alternative energy automotive technologies that meet the needs of both military and industry, during the 2006 SAE World Congress April 3-6 at Cobo Hall in Detroit, Mich. Below are some of the latest technologies showcased at this year's events:

Hydraulic Launch Assist (HLA) Bus
The Hydraulic Hybrid, Advanced Materials, and Multi-fuel Engine Research (HAMMER) program focuses on emerging technologies and methodologies for the next generation tactical and commercial wheeled vehicles. HAMMER technologies are robust and scalable for vehicles up to 20-ton payload. The HLA system results in exceptional performance advantages by reducing fuel consumption, exhaust emissions, and brake wear, while enhancing vehicle launch mobility. The HLA bus features Pilgrim Technology's secure wireless radio with a serial, USB, and Ethernet interface that can be used in mobile applications. Additionally, Pursuit Vision™ has incorporated an active laser night vision technology onto the HLA bus to offer an economical solution to 'blinding' from traditional incandescent light and thermal radiation. When the night vision technology is integrated onto the vehicle and mounted onto a holder, the unit simultaneously recharges itself and provides vision capabilities to the driver and passengers. When the devices is removed from the mount and hand held, users are able to view situations in any direction.

QUANTUM FUEL SYSTEMS TECHNOLOGY

HyHauler PlusTM- Mobile Hydrogen Infrastructure
This transportable hydrogen refueling station represents the first embodiment of the U.S. Army and Quantum's Mobile Hydrogen Infrastructure program. The mobile hydrogen platform demonstrates in-time solutions that meet the military's emerging hydrogen fuel demands of the 21st Century Base initiative. The HyHauler PlusTM is a lightweight, trailer-mounted, hydrogen fuel dispensing system for hydrogen and fuel cell vehicles, and has been specifically designed for fast-fills.

Aggressor – Alternative Mobility Vehicle (AMV)
The Aggressor is a light-duty, off-road AMV that is designed for military special operations applications. The AMV is mission specific and utilizes a modular design approach that integrates different hybrid powertrains and application-specific variants.

Hydrogen Escape Hybrid
The Hydrogen Escape Hybrid is being developed as an administrative vehicle and as a hydrogen technology demonstrator. Hybrid electric vehicles, such as the Ford Escape Hybrid, have been converted to run on hydrogen and are a practical, cost-effective, and user-friendly alternative of fuel cell vehicles. Hydrogen hybrids are energy efficient and have the potential to virtually eliminate VOC, CO, and CO2, while significantly reducing NOx and other toxic vehicle emissions.

TARDEC COLLABORATES WITH LOCAL AND NATIONAL UNIVERSITIES

Automotive Research Center (ARC) – University of Michigan
The ARC, lead by the University of Michigan, is working on alternative energy research with an emphasis on alternative powertrains and fuels for military vehicles. To compliment the modeling and simulation research, TARDEC

and ARC will showcase a prototyped re-power HMMWV, highlighting simulation tools and experimental results through illustrations and animations.

Center for Advanced Vehicular Systems (CAVS) – Mississippi State University

CAVS is an interdisciplinary center that provides engineering, research, development, and technology transfer teams that focus on technologies designed to improve human mobility. The research emphasizes energy solutions for battlefield applications, and methods to reduce the effort and energy required to increase reliability and sustain our armed forces in remote situations.

Additional technologies showcased during SAE World Congress include:

Nextek Power Systems' Advanced Mobile Micro Grid (A2MG) and Mobile Command Center (MCC). Nextek has designed and configured a new power topology for the MCC, making it dramatically more efficient and connectable to multiple sources of power.

United Solar Ovonic will be featuring special portable solar modules for use in military applications. The portable modules are compact, lightweight, and storable solar chargers

Dana Corporation's parallel and series Intelligent Hydraulic Drive (IHD) technology for the FMTV and the HMMWV

Automation Alley, Southeast Michigan's regional technology cluster, will be attracting creators and consumers of diverse technologies from a variety of industries around the world helping the NAC further the catalyst mission of linking industry, academia and government in the development and exchange of dual-use technologies.

AMSAA leads development of weapon performance estimates in urban terrain

By Brian B. Johnson
U.S. Army Materiel Systems Analysis Activity

A platoon makes its way through a town, clearing each building one by one. Shots are fired from a building window near the center of town; the platoon takes cover. Unmanned Aerial Vehicle (UAV) and ground surveillance sensors determine that the building is a central enemy command post. Intelligence suspects multiple insurgents as well as a cache of computer, communication equipment, weapons, and supplies are contained in the structure. Given that the risks associated with a direct ground assault was high, the platoon calls in precision artillery strikes, taking out the communications equipment and multiple insurgents. The platoon moves forward to breach the fortified building and secure the remaining enemy combatants inside, neutralizing the command post.

Combat engineers with Special Troops Battalion, 2nd Brigade Combat Team, prepare to enter and clear an enemy compound after breaching the walls with an explosive shape charge during a Combined Arms Live Fire Exercise Mar. 17 (US Army photo by Spc. Mike Pryor, 2nd Brigade Combat Team, 82nd Abn Div Public Affairs)

These events might be typical of what our ground forces could encounter when engaging in Military Operations in Urban Terrain (MOUT). The current generation warfighter has seen the battlefield change from the relatively simple rural battle area against known combatants to a more complex urban environment with multiple structures, unknown enemies, and non-combatant and collateral damage concerns.

The operational complexity of MOUT introduces complexity in the decision making process in engaging the enemy in urban terrain, such as:

How many rounds of which ammunition would be necessary to breach an exterior wall of a house?

Will just two 155mm howitzer rounds be able to neutralize an enemy sniper on the top level of a building?

What are the collateral damage implications of each engagement option that would meet the mission objectives while minimizing unwanted effects?

With urban training and deployment becoming more prevalent, knowing the answers to these questions are critical to ensure application of the appropriate force against the enemy while minimizing its impact on non-combatants.

Accordingly, AMSAA is leading the development of new MOUT weapon effectiveness methodologies to support Army system-level and force-level modeling efforts. A number of tools, to include the Smart Target Model Generator (STMG) and the Modular Effectiveness and Vulnerability Assessment (MEVA), are being used to model the effectiveness of indirect and direct fire weapons against threat targets. AMSAA is working to address the operational requirements for new methodologies to predict a weapon's effectiveness against urban structures, personnel and materiel targets within structures, personnel and materiel targets outside of structures, and collateral damage concerns.

There are many different components involved in predicting weapon performance in MOUT to ensure Army models and simulations provide the proper results to support the warfighter. AMSAA involvement in developing MOUT methodologies addresses many facets of the problem, to include:

standardized urban templates to provide geo-typical urban settings to represent urban terrain located throughout the world;

weapon system ability to breach or collapse structures as a function of building material and construction codes;

collateral damage estimates to provide war mission planners with the best options available to support the mission while minimizing unwanted damage to nearby structures or noncombatants

personnel and materiel incapacitation estimates caused by secondary building debris due to weapon munition impact on structures.

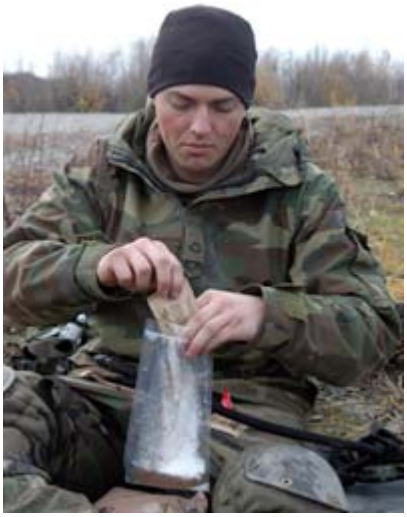
With respect to the personnel and materiel incapacitation estimates, the effects of secondary debris are of great interest to the analytical community. Testing is ongoing to characterize wall debris created by munitions and feed emerging methodology to predict the resulting lethality of this debris. AMSAA is involved in the testing process to insure the data required for modeling are obtained from tests for future Army analysis.

AMSAA's development of MOUT methodologies ensures that the Army will have relevant system-level performance estimates to support urban operations. AMSAA's continued involvement with MOUT effectiveness modeling will provide significant support to the Soldier as the urban environment continues to become more commonplace on the battlefield.

Beveraging technology—Hot coffee anywhere, anytime
Warfighters in Afghanistan, Iraq can enjoy warm drinks thanks to NSC

Natick Soldier Center Public Affairs Release

Warfighters in Afghanistan and Iraq can enjoy a nice hot cup of coffee --thanks to scientists at the DoD Combat Feeding Directorate (CFD), part of the Natick Soldier Center.



A Soldier in the field prepares a hot cup of coffee using a re-sealable Hot Beverage Bag. (Courtesy Photo)

Researchers from the CFD developed a Hot Beverage Bag (HBB), which is a re-sealable high-density polyethylene bag. The HBB provides a safe, easy and convenient method for Warfighters to heat water for coffee, tea, cocoa and other hot beverages by utilizing surplus flameless ration heaters (FRHs)--which are sometimes left unused in Meals, Ready-to-Eat (MREs)--and recycled MRE chipboard cartons.

The HBB enables Warfighters, who may be engaged in intense or extremely mobile operations where organized food service is not possible, a means to make coffee. The HBB may also be used for preparing hot water for sanitation (i.e., shaving and personal hygiene).

According to Stephen Moody, team leader for the Individual Combat Ration Team, the HBB is basically a plastic zippered bag with markings for different water levels (6, 8, and 12 ounces). The bag also includes instructions for heating beverages.

According to Moody, a few things prompted the creation of the HBB.

“It was noted during field evaluations that Soldiers often did not reconstitute their hot beverages--coffee, cocoa, or tea--because of the mess they would make in their canteen cup. This led to the idea for the inclusion of a bag that could also serve as a cup. Also, some Warfighters do not routinely carry a canteen cup,” Moody said.

Moody said that the bag, which is used in conjunction with the flameless ration heater, creates a demand for unused FRHs thus reducing the number of surplus heaters and related waste disposal concerns.

“An FRH is included in every MRE. Since they are not always used to heat the entrée--there's not always time--there are often extra FRHs available,” Moody said.

Response to the Hot Beverage Bag, which has been included with the MRE (one per menu) since 2005, has been extremely favorable. The ability to make hot coffee adds greatly to the quality of life for Soldiers deployed to war zones, such as Afghanistan and Iraq.

“The feedback to date has been overwhelmingly positive. This is a very simple, dependable and inexpensive addition to the ration that is an enormous benefit to the Warfighter. Not only does it give the Soldier the opportunity to enjoy a hot beverage, it also helps to keep them hydrated by encouraging additional fluid intake,” Moody said.

For more information about the Combat Feeding Directorate or the Natick Soldier Center, please visit the website: http://nsc.natick.army.mil/index.htm.

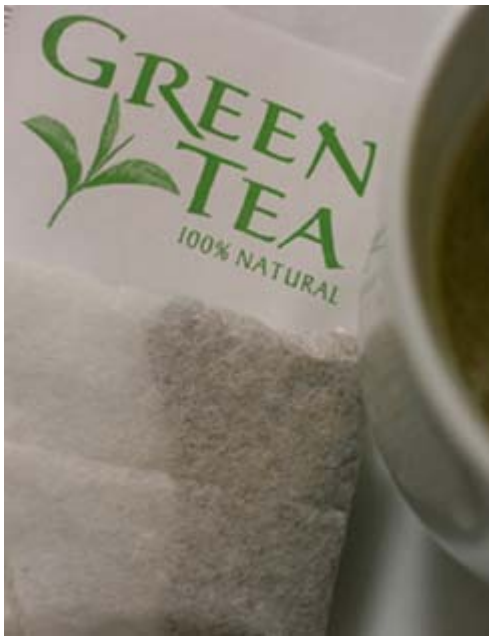
Natick Soldier Center and University of Massachusetts-Lowell researchers have uncovered a possible anti-cancer treatment

Natick Soldier Center Release

While working together to find novel ways to replace certain disposable battery components, researchers at the U.S. Army Natick Soldier Center (NSC) and the University of Massachusetts (UMASS)-Lowell made an unexpected discovery: a potential anti-cancer treatment. The researchers were investigating the use of natural, or 'green,' materials to provide power sources for the Soldier of the future.

The researchers have adopted a totally 'green' protocol, funded as an Environmental Quality Basic Research (EQBR) pollution prevention project, to make new molecules for electronic devices. One of the compounds that they were studying was catechin, a component in green tea that is being evaluated as a cancer inhibitor by leading scientists in the field of oncology.

NSC and UMASS-Lowell scientists were able to link several of the molecules together to make a small "oligomer" with the objective to make a better battery electrolyte. Although it was not found to be promising for battery applications, the compound appears to be very successful in inhibiting the growth of cancerous cells in tissue culture experiments. The effectiveness that is being shown is "incredible" according to Dr. Ferdinando Bruno, research chemist, NSC.



While investigating a green tea component as a novel way to replace certain disposable battery components, Natick Soldier Center and University of Massachusetts (UMASS)-Lowell scientists instead discovered a potentially effective cancer cell growth inhibitor. (Courtesy Photo)

"The catechin oligomer compounds have been shown to be effective in killing breast, stomach and neck cancer cells, in tissue culture, with approximately 90, 75 and 50 percent inhibition, respectively," Bruno stated.

Another amazing result is that while these compounds inhibit the growth of cancer cells, they do not affect the growth of normal cells. This is in striking contrast to traditional cancer drugs or treatments being used today. The current methods also adversely affect healthy cells in the course of killing cancerous ones.

An important part of this research involves the use of enzymes to make novel compounds. Dr. Lynne Samuelson, a research chemist from NSC and a pioneer of enzymatic template polymerization, suggested increasing the water solubility of these novel compounds by tethering them to a large molecule called polystyrene sulfonate. This templated reaction made the naturally occurring catechin oligomer longer lived and more water soluble, but the modified compound was still not effective against cancer cells at doses that could be administered to humans.

Jayant Kumar, director of the Center for Advanced Materials at UMASS-Lowell, then suggested adding ethanol, an alcohol, to try to make the compound more efficient. While growing up, Bruno attended Jesuit schools in Italy. He remembered the fountains in the schools' cafeterias filled with both water and wine and suggested adding 10 percent ethanol to the solution, which appears to be the correct combination. This was a key to the development of the new anti-carcinogens and made these new compounds effective at very low doses.

With increased stability and effectiveness, this family of compounds is now being tested for its efficacy against a wide variety of different human cancers by another UMASS collaborator, Dr. Susan J. Braunhut, and her team. This research is now being funded by the Department of Defense Breast Cancer Program.

With the help of Dr. Ramaswamy Nagarajan, additional funds were obtained from the Environmental Protection Agency in the form of an award to a graduate student, Subhalakshmi Nagarajan, at UMASS-Lowell. A patent application has been filed, and the next step will be to try to continue the research in vivo, with living organisms, with results hopefully just as positive.

“Over the next year,” Bruno said, “we plan to begin testing in mice for the drug’s effectiveness against transplanted human tumors.”

He added, “There are many other types of catechins, for instance, those that are found in white tea. We have only touched the surface.”

This has been a “good collaboration” between UMASS-Lowell and NSC, according to Bruno, and although this is definitely not part of NSC’s mission, Bruno said he sees the research as “totally revolutionary, with an incredible future.”

For more information about the Natick Soldier Center, please visit the website: http://nsc.natick.army.mil.

5th Army WMD Civil Support Teams Receive Training at ECBC

By Jennifer Gaskill
Edgewood Chemical Biological Center

5th Army WMD Civil Support Teams Receive Training at ECBC. (ECBC photo)

This month U.S. Army Edgewood Chemical Biological Center (ECBC) is supporting the 5th Army in providing intensive training in chemical and biological incident management to four National Guard Weapons of Mass Destruction Civil Support Teams. The teams, who traveled here from Delaware, New Hampshire, Vermont and Washington D.C., are receiving chemical and biological defense classroom instruction as well as training on the use and capabilities of incident response and laboratory equipment.

The teams are being trained using four scenarios involving the supposed use of weapons of mass destruction. The scenarios are being acted out at three locations on Aberdeen Proving Ground and one just off post property. To construct the scenarios, ECBC experts used current hazard and intelligence information. Each one has been developed to presumably involve a chemical, biological, radiological agent in a clandestine environment that will require the team to utilize all equipment and personnel. The ECBC training team also provided classroom instruction on the history of chemical biological warfare, properties and characteristics of chemical agents, recognizing drugs versus chemical or biological materials, improvised dispersal devices, industrial agents and topics on laboratory and sampling methods. Instruction has been provided by ECBC subject-matter experts.

Right now, 32 states have National Guard Civil Support Teams, and another 23 teams are in the process of forming. Each 22-person team is designed to augment "first response" agencies and must be prepared to deploy within 90 minutes of notification in response to a man-made or natural event causing massive destruction to lives or property within the United States or its territories. They are designed to provide assistance to a local incident commander in determining the nature and extent of an attack or incident; providing expert technical advice on response operations; and helping to identify and support the arrival of follow-on state and federal military response assets. They also support local and state authorities at domestic incident sites by identifying agents and substances, assessing current and projected consequences, advising on response measures, and assisting with requests for additional military support.

Chemical and Biological Attack Warning Systems Installed in Kuwait Ports

Edgewood Chemical Biological Center Public Release

Port warn system (ECBC Photo)

In cooperation with the Air Force Research Laboratory, Edgewood Chemical Biological Center recently completed the installation of the Port Warning and Reporting Network System at the Port of Ash Shuaybah, Kuwait and Kuwait Naval Base. Commonly called PortWARN, this system is an integrated hardware and software network that provides a commander with situational awareness to include near real-time display of detector data, event management, hazard prediction, and messaging. The system is made up of a series of detection nodes that communicate with a central command post through a remote data relay by either radio or Ethernet.

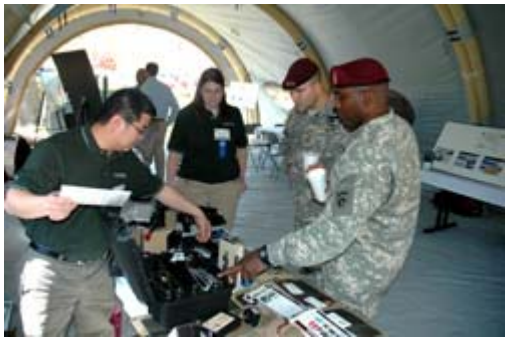
The PortWARN system integrates nuclear, biological and chemical reports generated from other systems. Should an event occur, the system can send reports to higher headquarters, notify the port workers, and instruct alarms on the nodes themselves to activate visual and audible warnings, such as strobe lights and voice sirens.

ECBC also installed and trained military personnel in Kuwait on the use of other chemical and biological defense technologies designed to integrate with the PortWARN system. Dry filter units were installed to provide a biological sample collection and detection capability and a two-tent collective protection unit was installed to provide personnel decontamination capabilities. A blood diagnostic tool for determining chemical agent exposure was provided to the port's medical clinic, and escape hoods were supplied to dockside workers.

RDECOM shows Bragg Soldiers what's being developed for their use

By Larry McCaskill
Research, Development and Engineering Command Public Communications Office

Amidst a vast array of commercial vendors displaying their new and neat gizmos and gadgets, scientists and engineers of the U.S. Army Research Development and Engineering Command displayed new technology available to the warfighters at Fort Bragg's Officers Club, North Carolina at a recent symposium.



Yuk Chan, a research chemical engineer in the Communications-Electronic Research, Development and Engineering Center's Army Power Division, explains various power solutions to Fort Bragg Soldiers during a recent symposium. (Photo by Larry McCaskill)

"I thought it was critical that we have a booth here so that Soldier's here can see what is being developed for their use," said Dr. Gay Kendall, RDECOM-FAST Science Advisor to XVIII Airborne Corps & Fort Bragg, N.C. "Many of the Soldiers that benefit from the research and development provided by RDECOM have no idea of what the command does or that they can reach back to the command with suggestions."

A booth at the symposium is a big step towards reaching many of the end users at Fort Bragg who are either preparing for deployments overseas or have just returned Kendall said.

Kendall said it's imperative to ensure the commanders know what the labs and research centers do. Soldiers attending symposiums similar to this one need to know that the subject matter experts discussing the displays are members of the Army.

"Soldiers can talk to the Army scientists and engineers and tell them what they think about the equipment. The Soldiers need to be aware that they are talking to people who are part of their team. Those working in Army laboratories and research centers are not looking at making a profit. They are looking at ways of helping and protecting the Soldier."

According to Janice B. Suggs, president of the Suggs Group Inc. and event coordinator, more than 1,200 Soldiers, airmen, Marines, Department of the Army civilians and family members attended this year's symposium.

"Attendees were able to see a lot of new technology and advancements available to the war fighter this year. I believe this is the largest turn out we've had in the 10 years of putting this together," Suggs said.

Army engineers learn how to reduce tactical and commercial vehicle skid accidents

By Paul Mehney and Ashley John
Tank Automotive Research, Development and Engineering Center

The U.S. Army has partnered with General Motors Corp. to help decrease the number of Soldier injuries due to accidents during skid driving conditions in combat zones.

TARDEC's National Automotive Center, working with GM Safe Driving School and the Army Safe Driver's Program from the Combat Readiness Center at Fort Leonard Wood, Mo., has integrated skid platform technologies onto a standard Humvee to help train Soldiers how to drive in skid conditions.

This program and subsequent recent skid training of Army engineers and staff by GM employees is part of a Cooperative Research and Development Agreement (CRADA) with GM for the development of new military and automotive technology applications.

"When outfitted on a military or commercial vehicle, this skid platform can simulate skid driving situations at 60 miles per hour, while the driver is only operating the vehicle at 15 miles per hour." according to George Loewen, TARDEC project engineer

Although the Army is currently using the skid training devices on civilian vehicles efficiently in theater, this is the first such application for the military Humvee.

"A skid training device could help us [Army] train Soldier prior to sending them into combat situations, aiding in reducing the number of rollovers that occur under a driving skid," said Mike Barkstall, Army Safe Drivers Program. "We wish our Soldiers would have had this type of training prior to their deployment. These skid situations are very similar to the conditions that are experienced in theater."

More than a dozen TARDEC and Tank Automotive-Armaments Command Life Cycle Management Command engineers completed the Driver Skills Enhancement Course at GM Proving Ground March 23, learning how to maneuver both tactical and commercial vehicles out of skid driving situations.

Currently, the Army is working to educate driving instructors at Fort Leonard Wood, Mo., on how to use this system so they can train Soldiers who are currently deployed overseas.

RDECOM operations employee named commander of Maryland Wing CAP

By Air Force Capt. Steven Solomon
Maryland Wing Civil Air Patrol Public Affairs

Gerald Weiss of RDECOM's operations office was recently named commander of the Maryland Wing of the Civil Air Patrol (CAP) at a change of command ceremony held at CAP's 2006 Middle East Region (MER) Conference and Banquet in Richmond, Va.

"He brings energy, enthusiasm, and commitment to excellence to this new position," said Col. Kay Joslin Walling, who was the wing commander until her appointment as MER commander in March. "Lt. Col. Weiss has served Maryland Wing well as both a squadron and group commander."

After the change of command, Walling promoted Weiss to the rank of colonel. She was assisted by Weiss' youngest daughter, Cadet Lt. Col. Joanna Weiss.

Lt. Col. John C. Kilgallon was interim commander of the wing between the time Walling became region commander and Weiss became wing commander.

Col. Gerard Weiss (center), new commander of the Maryland Wing, receives his colonel's epaulets from Col. Kay Joslin Walling, commander of CAP's Middle East Region (left) and his daughter, Cadet Lt. Col. Joanna Weiss (right), wearing her Penn State ROTC uniform. (Photo by Air Force 1st Lt. Brenda Reed)

"The experiences I've gained as a leader in the military, corporate world, and CAP have been invaluable," Weiss said, adding, "I am at a point in my life that I have the time, enthusiasm, and energy to undertake the serious responsibilities of wing commander."

Weiss, who had been serving as the wing's Group II commander, first joined CAP in 1999. He is a qualified CAP mission scanner and observer, planning section chief, air operations branch director, and ground team member. He also holds a specialty track rating for cadet programs, operations and command.

Weiss served in the U.S. Army from 1968 to 1971 as an enlisted soldier. He returned to active duty in 1978. He completed Officer Candidate School in 1981 and was commissioned a second lieutenant. He retired in 1995 after 20 years of active duty as a lieutenant colonel.

"It is with a great sense of humility and dedication that I assume command of the Maryland Wing," Weiss said

CAP is the official auxiliary of the U.S. Air Force, is a nonprofit organization with more than 57,000 members nationwide. CAP volunteers perform 95 percent of continental U.S. inland search and rescue missions as tasked by the Air Force Rescue Coordination Center and also perform homeland security, disaster relief and counter-drug missions at the request of federal, state, and local agencies.

CAP has been performing missions for America for more than 65 years

For information about the Maryland Wing of CAP, visit http://mdcap.org/ .

(Editor's note: This article was used with permission from the Maryland Wing CAP)

ARL engineer looks to improve vehicle protection

By Dave Davison
Army Research Laboratory Public Affairs

Dr. Rahul Gupta has been working at the Army Research Laboratory for only a short time but he's already started making an impact and he knows a lot about impacts.

A mechanical engineer at the Weapons and Materials Directorate (WMRD) at Aberdeen Proving Ground, Md. Gupta does computer modeling and simulation involving structural response to mine blast explosion. He recently won an award for a paper at the Computational Engineering International Visualization Conference. The paper was co-authored with his Ph.D. advisor Dr. Ajit D. Kelkar and described Gupta's studies of energy absorbing barriers to absorb and dissipate the kinetic energy of autos that run off the road. Using finite element analysis, the paper demonstrated how to increase vehicle occupant survivability by smoothly redirecting an errant vehicle to a controlled stop using a novel airbag technology.

Gupta has worked on consulting projects with a number of companies including the big three automakers (on crash impact protection) and Sony-Ericsson (cell phone drop protection). He's also worked on a number of other projects including, with NASA and Carnegie Mellon University, performing stress analysis on the structure of a robot used to explore live volcanoes. At ARL, his work involves vertical impact (bottom up) on Army vehicle structures to increase protection from improvised explosive devices.

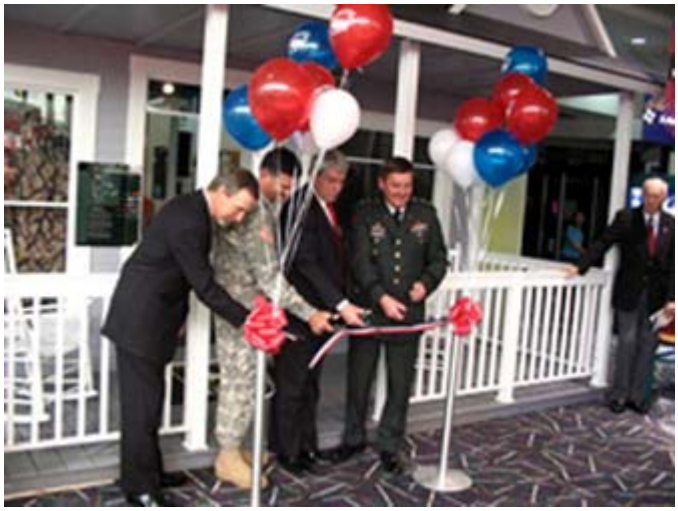
"Designing by computer saves time and money and requires fewer field tests," Gupta pointed out although eventually the models and simulations must be tested in the field.

A native of India, Gupta is a graduate of the Indian Institute of Technology. He moved to the United States about 15 years ago and has become a naturalized citizen. He earned his masters degree and Ph.D. at North Carolina A&T State University.

It was while he was finishing work on his doctorate degree, that he met Jill Smith, WMRD director, who was on campus participating in an outreach recruitment visit. As a result, Gupta was hired in January in the "distinguished scholar" category, and said he "loves working at ARL."

"ARL is the perfect environment for a Ph.D. level scientist or engineer," he said.

Ribbon Cutting



New exhibit focuses on everyday lives

James W. Frye, Jr.; director, National Science Center, Augusta, Ga., Brig. Gen. Randolph P. Strong, Commanding General U.S. Army Signal Center and Fort Gordon; Rob Dennis, CEO, National Science Center, Inc.; and Maj. Gen. Roger A. Nadeau, Commanding General, U.S. Army Research Development and Engineering Command, share the honor of cutting the ribbon opening the center's newest exhibition – Tactical to Practical, Army House of Technology, to the general public. The structure was built by the U.S. Army Materiel Command for the 2004-AUSA Conference and was sitting in storage gathering dust. The AMC Public and Congressional Affairs donated the structure because of past partnerships with Fort Discovery and the National Science Center. The semi-permanent exhibit focuses technologies used in everyday lives and homes.
(Photo by Larry D. McCaskill)